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STATE
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MONTANA

DIVISION OF FORENSIC SCIENCE

DEPARTMENT OF JUSTICE

275 West Front Street, Missoula, Mt. 59801 (406) 728-4970

Ronald L. Rivers, M.D.
State Medical Examiner

Jay M. Glass
Director of Forensic Services

Arnold B. Melnikoff
Laboratory Bureau Chief

OCTOBER 1981

WELCOME

Melodee Shay has just joined our secretarial staff. She will be handling most of the coroners reports during the day. She is replacing Bernice Vandergrift who moved to a new job in Washington.

ATOMIC ADVANCES

Bill Newhouse, Firearms and Toolmarks Examiner, is taking a week-long course in Seattle on the operation of our new atomic absorption spectrophotometer. This will be used primarily to determine if a person has used a gun recently by detected gunshot residues, but it will also be used to determine trace amounts of some elemental poisons.

SHORT SEMINARS

Regional half-day presentations by the Division of Forensic Science will be presented this month in Havre on the 7th, and Dillon on the 14th. For further information, contact Emil Eliason in Havre and Ken Brunkhorst in Dillon.

COCAINE

There have been several deaths in Montana from intravenous injection of cocaine. Recently submitted to the lab was a cocaine sample mixed with boric acid. This is a very lethal mixture since boric acid has been known to kill infants by absorption through the skin. So it doesn't take much, particularly if injected directly into the blood stream.

STATE DOCUMENTS COLLECTION

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ON CALL SCHEDULE - MONTANA STATE MEDICAL EXAMINER

OCTOBER 1981

275 W. Front Street
Missoula, Montana 59802

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3 Ken Meuller
4 Ken Mueller	5	6	7	8	9	10 Ron Rivers
11 Ron Rivers	12	13	14	15	16	17 Ron Rivers
18 Ron Rivers	19	20	21	22	23	24 Ron Rivers
25 Ron Rivers	26	27	28	29	30	31 Ron Rivers

Telephone Numbers: State Office - 728-4970
WATS Line - 243-5796

Home Phone: Dr. Ron Rivers- 728-2033 (Home)
(week nights call unless otherwise indicated)

Dr. John Pfaff - Great Falls
Hospital - 727-3333
Home - 727-3905

Dr. Ken Mueller- Billings
Hospital - 657-7000
Home - 248-3024

October 1981
ACCIDENTAL HYPOTHERMIA
R. L. Rivers, M.D.

"Found him this morning behind Stockman's Bar."

"Who is he?"

"Just a skid. Name's Michey Donavan. Been drinking ever since he hit town. He was last seen by the bartender about 2:00 a.m. He had a bottle in a paper bag and was staggering around. The weather dipped to 0^{o} last night; figured he must have died from exposure. Would be easy since he's so old and skinny."

QUESTIONS:

1. How can you specifically confirm that he was frozen to death?

2. What other tests or procedures should be ordered on this man?

ANSWERS:

1. Death from hypothermia and from hyperthermia can only be determined by obtaining a body temperature. Changes described in various organs are vague and nonspecific.

   The temperature of the body should be taken as soon as possible. A deep (six inches or more) rectal temperature is usually sufficient. A note should also be made of the environmental temperatures. Hypothermia is defined as having a body temperature below 95°F (35°C). This is only 3.6 degrees below normal body temperatures! When a body temperature of 90°F is reached, 60 to 80 percent of people will die. However, body temperatures as low as 64°F have survived! Particularly in young children found in cold water. But in most instances, cold water or rain, or snow accelerates death from hypothermia. Death can occur in 20 minutes depending on temperature and normal chill.

   Infants and the elderly are more susceptible to freezing to death. This may be due to inefficient thermoregulation by the brain. The same center in the brain may account for sending out incorrect signals that the body is warm. This can account for victims removing all or part of their clothing prior to death.

2. Of course a blood alcohol should be requested. Alcohol opens up the capillaries and causes a quicker loss of heat. Another point, however, is that death may have been from acute alcohol poisoning or methanol poisoning. Should antifreeze ingestion be considered, then the test must be specifically ordered. It is not included in an ordinary analysis or drug screen.

   If an autopsy is performed, then the medical examiner could see birefringent calcium oxalate crystals in the kidneys. This will confirm death due to ethylene glycol (antifreeze) poisoning. The autopsy will also exclude death from other causes or foul play.